REXYGEN System
Release Notes

REX Controls s.r.o.

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REXYGEN 2.50.11

1.1 RexCore

- Fixed reading arrays on Arm platform. (#3326)
- Added function ReadItems to JsonRPC. (#3508)
- Support for changing password over JsonRPC. (#3518)
- Fixed few possible memory leaks in REST API. (#3583)

1.2 REXYGEN Studio

- Fixed crash while opening driver configuration. (#3421)
- Fixed doubleclick in quick insert. (#3307)

1.3 MAVLink

- Various fixes and support for shortened message. (#3369)
- Added support for arrays. (#3375)

1.4 I/O Drivers

- SimDrv redesigned to better UX (#3172)

1.5 RexComp

- Fixed parsing of string parameters. (#3305)
- Fixed handling of Halt on IODRV. (#3353)
- Added support for basic arithmetic to driver flag parser. (#3401)
- Fixed compilation of block PYTHON in subsystem. (#3457)
- Fixed handling of scoped flags. (#3572)

1.6 Function Blocks

- Added block SYSLOG. (#2311)
- Added block OSD. (#3295)
- Allow RDC blocks to share single socket. (#3296)
- Added blocks EKF and NSSM. (#3458)
- Fixed parsing of dots in object names in PJSOCT. (#3467)
- Added block SYSEVENT. (#3498)
- Added persistence for SHIFTOCT, OSD, SHLD, DIF_, TIMER, ABSROT, ATMT, EATMT. (#3515)
- Fixed handling of drivers in SRTF. (#3569)
- Fixed parsing of exponent number format in PJSOCT. (#3571)

1.7 General

- Added support for UniPi Axon. (#3213)
- Added support for UniPi Neuron. (#3330)
- Added support for 64bit Raspberry Pi. (#3456)
- Added support for UniPi Patron. (#3636)

1.8 REXLANG Function Block

- Added function for browsing algorithm. (#3167)
- Added functions for accessing shared memory. (#3345)

1.9 Database access driver (DbDrv)

- Added i/o flags Done, Error, Empty and TriggerState. (#3278)
- Fixed handling of more than 32 groups. (#3356)
- Fixed closing operatoin. (#3397)
- Added flags Count, LastTimeStr, ErrorCount. (#3398)
- Fixed detection of lost connection to PostgreSQL. (#3563)

1.10 REXYGEN HMI

- Fixed Buttonize in DWM (#3332)

1.11 Monarco HAT

- Fixed calling of main function. (#3419)

1.12 REXYGEN Diagnostics

- Fixed limit on number of archives. (#3555)

1.13 OPC UA (OpcUaDrv)

- Fixed reconnection from some error states. (#3570)
- Extended support for data types. (#3582)

1.14 OMRON driver

- Added support for array. (#3357)
- Added flags RE, WE, WF. (#3359)

REXYGEN 2.50.10

2.1 Function Blocks

- Added PARE function blok. (#1958)
- The iE output of the SILO and SILOS function blocks has been renamed to lastErr and its behavior has been slightly changed. See the SILO/SILOS block documentation. (#2149)
- Error recovery and default parameters improvement in PID controllers. (#2323)
- Function blocks RS, SR, RLY, MCU and ARLY now support persistent state. (#2744)
- Added support for storing strings to archive. (#2820)
- Added block EQ for comparing strings and numbers. (#2833)
- Fixed RDC block on Linux. (#2909)
- JSON parser blocs extended with live parameter substitutions. (#3082)
- Blocks RTOV and VTOR now allow setting parameter n=0. (#3130)
- Added EQ function blok. (#3134)
- Fixed CNA behavior for 64 bit values. (#3152)
- The working directory of the EPC block when running on Windows has been changed to the standard directory "C:\ProgramData\...". (#3174)
- Fixed off-by-one error resulting in missing character in CONCAT. (#3265)
- Added function block MvmModem for Marvelmind. (#3097)

2.2 REXLANG Function Block

- The REXLANG block support arrays on input and executing other blocks. (#2382)
- Added functions CRC8/16/32. (#2863)
- Added support for non-standard baud rates of serial device. (#2876)
- Improved precision of the ElapsedTime() function in REXLANG on Windows machines. (#3050)
- Added function Archive for storing values to archive. (#3209)

2.3 REXYGEN HMI

- Added the possibility to hide the Logout link in HMI. (#3099)
- Improved formatting of the legend in web HMI trends. (#3280)

2.4 Monarco HAT

- Watchdog interval is automatically calculated based on project timing. This avoids activation of watchdog in projects with longer sampling periods. (#1971)

2.5 I/O Drivers

- Added experimental driver for the OPC UA protocol (both client and server). (#2212)
- Added experimental driver for the MAVLink protocol. (#2912)

2.6 Documentation and Manuals

- Minor updates and improvements in manuals of I/O drivers. (#3210)

2.7 RexComp

- Explicit data type definition can be set for subsystem interface blocks Inport and Outport. Useful for special purposes, e.g. when these blocks are not connected to any signal. (#2822)
- Fixed generation of superfluous dependency on libraries from which no block is used. (#3022)

- Improved error messages related to I/O drivers. (#3235)

2.8 Database access driver (DbDrv)

- Updated screenshots. (#3084)
- Added a new block ARS which can be used to store data of any type including vectors to archive. (#3114)

2.9 REXYGEN HMI Designer

- Fixed problem with transparency of TRND elements. (#2949)
- The option "Buttonize" has been added among group animations. This allows the user to turn any graphical object into a clickable button. (#2983)

2.10 REXYGEN Diagnostics

- Fixed a bug resulting in incorrect connection string displayed at outputs of function blocks. (#3032)
- Fixed signal naming for trends with more than 16 signals. (#2722)

2.11 REXYGEN Studio

- Improved Edit Matrix dialog. It is now possible to copy and paste matrix data in format compatbile with Excel or MATLAB. For detail see help available in the dialog. (#2986)
- Subsystem with parameters (mask) can be configured to be opened on double-click (Options tab in Block Properties). (#2616)
- Added "Find block in task" feature. (#2647)
- Fixed parsing of decimal numbers when setting the Y-axis range of trend plot manually in REXYGEN Studio. (#3038)
- Fixed problem with subsystem masks including a popup parameter. (#3041)
- Fixed reloading of projects using library subsystems when multiple instances of Studio are running simultaneously. (#3054)
- Improved positioning of the Download dialog when using multiple instances of REXYGEN Studio at the same time. (#3070)
- Dialog for declaration of subsystem parameters has been redesigned and integrated into function block properties dialog. (#3092)

2.12 General

- Added console application RexArc for archive export to CSV or JSON formats (#2773)
- Added experimental support for ARM64 platform. (#2882)

2.13 WAGO

- Fixed potential crash caused by unaligned access to persistent memory. (#2953)

2.14 PYTHON Function Blocks

- Added experimental PYTHON function block. (#2821)
- Added support for matrix/NumPy and image/OpenCV signals. (#2979)

2.15 Examples

- Fixed HID examples on 64bit systems. (#2887)

2.16 WebBuDi HMI

- The ALT element now works correctly on the Raspberry Pi touchscreen. (#2832)

2.17 Raspberry Pi (RPiDrv)

- Added support for GPIO pins on Raspberry Pi 4. (#2867)

REXYGEN 2.50.9

3.1 Function Blocks

- Fixed behaviour of et and rt outputs when resetting the TIMER block and when HLD=on right at startup. (#2742)
- Fixed behaviour of the FIND function block when looking for an empty string. Result of operation: String not found. (#2757)

3.2 RexCore

- Fixed null string error in Persistent memory. (#2754)

3.3 IoT API

- Fixed a memory leak in REST API when reading string values in JSON format. (#2767)

3.4 Examples

- Example 0302-03 extended with Matlab scripts for data exchange via REST API of REXYGEN. (#2776)

3.5 REXLANG Function Block

- Added new functions for converting numbers in float and double precision to array of bytes as per IEEE 754 standard. Functions for backward transformation are available as well. These functions are used in examples 0501-01 and 0504-01. (#2171)

3.6 REXYGEN HMI Designer

- Fixed a problem with SHA1 hash generator, causing a crash of the HMI build process on some computers. (#2790)

3.7 REXYGEN Studio

- Fixed occassional crashes of REXYGEN Studion. (#2726)
- Fixed occassional crashes when multiple instances of REXYGEN Studio are connected to the same target device. (#2759)
- Fixed the problem with library function blocks turning black. (#2769)

REXYGEN 2.50.8

4.1 RexComp

- Improved error messages of the internal compiler. (#2303)

4.2 Function Blocks

- Fixed memory leak in GETPS. (#2321)
- Conversion of numbers to hexadecimal format in ITOS and REXLANG blocks uses upper-case letters. (#2314)
- Major release of MATRIX library (blocks for matrix and vector operations). It supports orthogonal algorithms for solving of linear equations, SVD, eigenvalues and other algorithms. See Function Blocks manual for details. (#2357)
- Fixed rt and et outputs of the TIMER block in "Delayed OFF" and "Delayed change" modes. (#2396)
- Added validity tests for parameters of BIS/BINS blocks. (#2728)

4.3 REXYGEN Studio

- REXYGEN Studio now supports the so-called library subsystems. These allow creation of reusable user-defined function blocks. More information can be found in REXYGEN Studio manual. (#2166)
- Fixed rendering and sizing on HiDPI displays. (#2264)
- Block library dialog has been redesigned and search functionality has been improved. (#2458)
- It is now possible to disconnect existing connections of a function block. Right click the input or output and choose "Break/Disconnect line". (#531)

- Text annotations in block diagrams can be aligned to left/right margin or centered. (#648)
- The blocks which are halted are now clearly marked. (#1726)
- Fulltext search in treeview within Example library (#1935)
- Fixed context menu item "Show in diagnostic tree". (#2387)
- Redesigned dialog for editing function block properties. Quick reference is available for help. Added possibility to set block size manually. (#2474)
- Fixed occasional crash while opening a dialog. (#2603)

4.4 RexCore

- REST API: more standard format of error response in JSON/XML (#2364)
- Persistent memory info is shown in Core/Info System Log (#2624)

4.5 I/O Drivers

- MQTT communication driver has been implemented to support projects in IoT domains and data exchange with cloud platforms. (#1462)

4.6 REXYGEN HMI

- Virtual keyboard is available for login and /api pages. (#2377)

4.7 REXYGEN HMI Designer

- Browse function in HMI Designer sorts block alphabetically. (#2415)
- The Purify extension allows removal of invalid HMI components from SVG files. (#2416)
- More straightforward connection to target device for browsing connection strings. (#2683)

4.8 WAGO

- Added support for modules 610, 1405, 496, 467 and 16-bit digital I/O. (#2646)

4.9 Monarco HAT

- Added I/O flag for disabling 1-Wire bus and 5V output on the Monarco HAT. (#2700)

4.10 REXYGEN Diagnostics

- Function blocks are by default sorted alphabetically in the diagnostic tree view. (#2263)

REXYGEN 2.50.7

5.1 General

- REX system is now REXYGEN. (#2104)

5.2 RexCore

- Invalid UTF-8 characters are replaced by fallback symbol #. (#2089)

5.3 Documentation and Manuals

- Added documentation of functions for SPI and I2C communication in the REXLANG block. (#2042)

5.4 WAGO

- REXYGEN on WAGO supports connection to MySQL, MSSQL, MariaDB and PostgreSQL databases. (#2027)
- Fixed backup to/from internal flash memory. (#2176)
- License (Site ID) is shown in web-based interface. (#2233)

5.5 RexDraw

- Added the possibility to export and import the list of stations for the Download dialog. (#1911)
- Tooltips with values of signals are correctly refreshed in Watch mode. (#1927)
- The BSTATE parameter of the MP block is not synchronized during termination of connection. (#2000)

5.6 Monarco HAT

- Fixed problems when using one input flag multiple times. (#2008)

REX 2.50.6

6.1 Function Blocks

- Fixed stack overflow in CONCAT function block. (#1938)

REX 2.50.5

7.1 RexDraw

- It is possible to analyze data using cursors in a trend window. (#985)
- Function blocks may be ordered alphabetically in the diagnostic window. (#1072)
- A trend supports export of data from a selected time interval. (#1365)
- Fixed always disabled window list menu option (Window-Windows). (#1944)
- Fixed timeout during download on very slow connections. (#1982)

7.2 Modbus Communication (MbDrv)

- A timeout behavior has been improved and documentation has been updated. (#1978)
- Fixed timeouts in Modbus RTU. (#1903)

7.3 OPC DA Server

- Fixed reinitialization of connection after configuration is downloaded. (#1994)

7.4 Function Blocks

- Fixed incorrect displaying of a value in the DISPLAY block as an enum type in some cases. (#1929)
- Fixed behaviour of the ANLS block after change of the y0 parameter. (#1923)

7.5 REXLANG Function Block

- Fixed problems with I2C communication in the REXLANG block. (#1907)

7.6 RexComp

- It is possible to use placeholders in names of I/O driver signals. These are replaced by the value of subsystem parameter at compile-time. (#1113)
- Check is performed that all GUIDs are unique during compilation. (#1988)

7.7 WAGO

- Fixed initialization of modules if some of them are not used in the control algorithm. (#1969)

7.8 General

- Added support for PFC100 and PFC200 WAGO platforms. (#1312)

7.9 Raspberry Pi (RPiDrv)

- New supported target platform: Pigeon PLC. (#1550)
- Installation scripts were updated to support the recently released Raspbian Stretch OS. (#1960)

7.10 WebWatch HMI

- WebWatch - heartbeat detects interrupted connection (#1879)
- Fixed a false alarm message in dialogs of function blocks without parameters. (#1881)

REX 2.50.4

8.1 RexDraw

- Added options for backup of executive configuration from target device and restore from a backup. (#1804)
- A compiler window is closed after download and switching to Watch mode. (#1261)
- Added possibility to save project source on target device (using the PROJECT block). (#1677)
- Fixed possible freeze of RexDraw when connection with target is interruped. (#1717)
- The dialog for opening example projects has been improved. (#1722)
- Fixed possible freeze of watching items after download of configuration. (#1753)
- Fixed enter of array with zero length. (#1768)
- Added option to save a whole project to another directory. (#1794)
- Web interface (HMI) can be opened from the Target menu. (#1840)

8.2 I/O Drivers

- A FinsDrv driver for communication with OMRRON PLC via FINS protocol has been implemented. (#1633)

8.3 Modbus Communication (MbDrv)

- Fixed freezing of diagnostics on long timeouts. (#1845)

8.4 Raspberry Pi (RPiDrv)

- Fixed problems with GPIO access on some variants of the Raspberry Pi. (#1896)

8.5 Database access driver (DbDrv)

- A better recovery from a broken connection has been implemented. (#1791)
- ANSI approved single quotes are used in SQL statements. (#1789)

8.6 WebWatch HMI

- WebWatch can display and write string variables (#1820)

8.7 Documentation and Manuals

- Documentation of the OPC UA server is available. (#1834)
- Documentation for RexHMI Designer is available. (#1868)

8.8 Installer - Windows

- Window s XP and older is no longer supported. (#1814)
- A self-signed certificate for REX runtime is generated during installation. (#1497)

8.9 1-Wire Communication (OwsDrv)

- A server keep-alive is honored and an idle command is processed to avoid a timeout. (#1728)

8.10 REXYGEN HMI Designer

- Fixed freezing of RexHMI extension if RexHMI Designer was opened from RexDraw. (#1860)
- Target browser distinguishes between inputs and parameters of the browsed block. (#1587)
- TRND component supports disabling of interactivity using disable_by input. (#1706)
- Design of the extension dialogs is improved. (#1867)

8.11 RexView

- Fixed RPi driver diagnostics display in RexView. (#1837)

8.12 Function Blocks

- A matrix function block library has been implemented. A documentation is available in English language. (#1217)
- Added function block ITOS - "Integer to String" (#1810)

8.13 Examples

- Added example on Modbus RTU using MonarcoHAT. (#1839)

8.14 WebBuDi HMI

- WebBuDi - DW component supports custom colors for buttons (#1824)

8.15 REXYGEN HMI

- Web HMI is automatically refreshed when REX configuration changes. (#1419)

REX 2.50.3

9.1 RexDraw

- Fixed parameter adjustment of blocks AND*/OR* in watch mode. (#1754)
- Added multiline string edit dialog. (#1297)
- Fixed flag localization between multiple windows. (#1470)
- Added diagnostic entry into block context menu. (#1758)
- The workflow in RexDraw was slightly changed. The connection to the target device is now independent of the development or watch mode of the application. (#1759)
- Fixed one-space error when editing string parameter in watch mode. (#1771)
- Added support for \x00 and \u0000 control sequences. (#1776)

9.2 RexCore

- Fixed double value truncation when reading TREND buffer with REST API. (#1772)
- Added support for \x00 and \u0000 control sequences in REXLANG block. (#1775)

9.3 Modbus Communication (MbDrv)

- Reading of signals which are temporary disabled by the _ReadEnable flag has been fixed (last known value is held and quality is set to UNCERTAIN). (#1641)

9.4 RexComp

- Added support for \r, \n, \t control sequences and support for multi-line strings. (#1709)

9.5 Function Blocks

- Added strreplace() function into REXLANG block. (#1572)
- Added support for custom headers in HTTP block version 2. (#1708)
- Fixed basic authentication in HTTP block. (#1725)
- SMTP block works properly with empty domain parameter. (#1778)

9.6 Function Block Editors

- Fixed crash of SFCEditor on exit. (#974)

REX 2.50.2

10.1 General

- The EPC block on Linux now support correct termination of executed process including all its children by the RESET input. (#1593)
- Fixed licensing on Windows platform with more than 8 interfaces. (#1720)

10.2 1-Wire Communication (OwsDrv)

- Fixed crash of OwsDrv when no signal was configured. (#1741)

10.3 REXYGEN HMI Designer

- RexHMI Designer synchronized with Inkscape 0.92. (#1735)

10.4 RexCore

- Fixed HTTPS connection. (#1702)

10.5 REXYGEN HMI

- Fixed authentication using token. (#1705)

10.6 RexDraw

- RexDraw indicates the state of active executive in the status bar. (#1732)
- It is possible to make changes in the diagram and download configuration in online mode. (#1733)
- An executive change is correctly detected in the online mode. (#1734)
- It is possible to open task and executive diagnostics by clicking on respective block in the Watch mode. (#1742)

10.7 Function Blocks

- Implemented 4-inputs a 16-inputs variants of blocks ADD, OR, AND. (#1595)

REX 2.50.1

11.1 I/O Drivers

- A driver for Monarco HAT has been created. (#1609)

11.2 RexView

- Fixed bug that executive structure was not refreshed after download. (#1663)

11.3 RexDraw

- Messages in the compiler windows are coloured by their severity. (#1688)
- Fixed bad position of a tooltip window when zoomed. (#1695)

REX 2.50 RC

12.1 RexCore

- TRND blocks have a new parameter for selection of timestamp source (#1530)
- The SSL protocol is supported by the diagnostic protocol and by the integrated web server. (#1349)
- Persistent parameters are supported. A file is used as a storage on platforms where persistent memory is not present. (#1067)
- RexCore is now configured by a unified rexcore.cfg file on all platforms. (#1477)
- RexCore is now properly integrated with systemd an the system log may be redirected into journald. (#1685)

12.2 RexDraw

- A RexView functionality has been integrated into RexDraw and is accessible in on-line mode as Diagnostics from the menu. (#1038)
- Now it is possible to adjust the number of decimal digits in the "Settings" dialog window. (#534)
- It is possible to view trends in RexDraw when in on-line mode. (#1683)

12.3 General

- Licensing key is required to activate demo mode (#1547)
- All applications are signed with certificate (#1554)
- A block library for functions operating with time has been created. (#1689)
- A REST API interface has been added to integrated web server of RexCore. (#1690)

12.4 Documentation and Manuals

- Function blocks documentation in the WebWatch HMI is loaded from the internal web server (#1648)

12.5 Function Blocks

- New function blocks RDFT, MINMAX, ABSROT have been added. (#829)
- A new function block SHIFTOCT has been added. (#1188)
- A new pseudo-block PROJECT has been created that allows to store additional settings and parameters related to the project. (#1488)
- A new pseudo-block HMI has been created that allows integration of HMI into the binary configuration. (#1681)
- A new pseudo-block WWW has been created that allows integration of a web server static content into the binary configuration. (#1682)
- A new pseudo-block INFO has been created that allows to store information about author and executive identification. (#1684)

12.6 OPC UA server

- The REX Control System supports OPC Unified Architecture as a server (#1687)

12.7 WebWatch HMI

- It is possible to set blocks to be monitored immediately after connection is established in WebWatch (#1643)

REX 2.47 Beta 2

13.1 Modbus Communication (MbDrv)

- Support for IPv6 added to MbDrv (#1450)

13.2 1-Wire Communication (OwsDrv)

- Support for IPv6 added to OwsDrv (#1449)

REX 2.46 Internal Beta

14.1 RexDraw

- A start-up wizard is available for creating a new project from example. (#981)
- New keyboard shortcuts are available. (#1341)
- Function blocks are no longer distorted when rotated. (#1429)
- A Display function block is now available to show values in real-time in the online mode. (#1201)

14.2 REXLANG Function Block

- New variants of the Trace command are available to differentiate the importance of individual messages written to the system log. (#1460)

14.3 RexView

- Connection dialogs in RexDraw and RexView have been unified. (#1486)
- Signals with more than 4 items are now correctly displayed when browsing archives. (#932)

14.4 RexComp

- The compiler now displays information about the processed files (project files, HMI files, etc. (#1439)

14.5 General

- Project identification has been added. It is possible to compare the source files on host computer with the algorithm running on the target device. (#1529)

- IPv6 is supported in REX (#237)
- Authentication by user name and password has been implemented. (#1475)
- It is no longer necessary to use the \\.\COM15 notation in COM ports >9 (Modbus RTU configuration, REXLANG function block etc.). Simply use COM15. (#1234)

14.6 RexCore

- System Log now contains valid timestamps even before the executive is started. (#1363)
- Security measures are implemented. User name and password are required for connecting to the target device. (#1498)

14.7 WebBuDi HMI

- Files for WebBuDi HMI are generated during project compilation. (#1428)

14.8 Modbus Communication (MbDrv)

- The MTM__slaveID flag is now writable and can be used to suppress communication with the given slave station. (#1232)
- It is now possible to change the IP address of the Slave station to connect to in runtime. (#1269)
- The configurator has been completely redesigned. The configurator now detects overlapping in registers mapping. (#1389)
- The communication status indicators now correctly show the Disabled/Connecting/Connec statuses. (#1452)
- The Modbus configurator can now manipulate multiple items at once. (#1504)

14.9 Function Blocks

- A block library for string manipulation has been created. String operations are also supported in the REXLANG function block. (#1084)
- The ACD block now correctly handles signals of all data types. (#1351)

14.10 1-Wire Communication (OwsDrv)

- Added support for alarms of the OWFS package (the /alarm folder). Improved error reporting in system log. (#1329)

14.11 Database access driver (DbDrv)

- SQL queries for reading data from database can be modified from algorithm in runtime (e.g. for reading recipes). (#1421)
- A new configuration dialog for the database driver has been implemented. (#1440)

14.12 REXYGEN HMI Designer

- RexHMI Designer is now an integral part of the development tools of the REX Control System. It is based on Inkscape 0.91. (#1174)

REX 2.45 Beta 1

15.1 RexDraw

- Renaming project files no longer causes a crash. (#1332)
- It is possible to find the flags corresponding with From/Goto flags (via context menu). (#549)
- Changes of REXLANG function block parameters in online mode are supported. (#665)
- Regardless of the licence status, the values of signals are displayed correctly during online monitoring. (#1001)
- RexDraw no longer crashes when the line is deleted while dragging. (#1258)
- Connecting lines and function blocks is more user-friendly. (#536)
- RexDraw automatically gains focus after closing the Block Library window. (#576)
- The parameters of function blocks inside an IOTASK are now handled correctly during online monitoring. (#781)
- Pop-up menu added to RexDraw. (#821)
- It is possible to open the task files directly from project main file in RexDraw (via context menu). (#822)
- Handling of the last opened project was fixed. (#860)
- Process of generating in/out ports in new subsystems is changed. (#924)
- It is now possible to download HMI on target from RexDraw (#928)
- Fixed problem with files on network drive (#1063)
- Implemented zoom functinality (#1122)
- When starting a new REXLANG code, the file contains a sample program. (#1277)

- New text editor for RexLang with syntax highlighting and auto completion is now integrated into RexDraw (#1339)

15.2 General

- All unicode strings are stored in UTF8. (#1095)
- A highly optimized web server has been integrated into RexCore. (#1037)
- New function blocks HTTP and SMTP have been implemented. (#1082)
- REX Tray Monitor has been added. (#1146)
- New block REGEXP implemented (#1292)
- Separator of the decimal part of a floating point (real) number can be both dot or comma. (#388)
- A new parameter "offset" has been added to blocks SG and SGI. (#1094)
- (#1214)

15.3 RexCore

- A new driver for generic purpose I/O (GPIO) in Linux has been created. (#1141)
- Error detection and recovery during initialization phase has been improved. (#767)
- Support of SPI communication has been added to the REXLANG block. (#1083)
- Added access to individual bits of integer value - e.g. "task.CNI:icn[5]" (#1100)
- Added support for HMI included into configuration (#1194)

15.4 RexView

- Saving sessions is now supported (floating windows, trend viewports, inspect panel etc.). (#847)
- Fixed memory allocation problems while reading trends with very fast signals (1 KHz). (#976)

15.5 Installer - Windows

- A bug in Windows installer has been fixed. RexView was not installed correctly when "OPC DA server..." was not included among the installed components. (#1091)

15.6 Inkscape HMI

- It is possible to disable tooltips for objects, which is useful for touchpanels. (#1191)

15.7 Function Blocks

- Unexpected value on the block DIF_ in first step was fixed. (#797)
- Added the parameter sfcname (SFC editor file name) in blocks ATMT and EATMT. (#902)
- Fixed issue in RDC block - the incoming data is now processed independently of the defined period for sending data. (#1202)

15.8 REXLANG Function Block

- Support of Structured Text Language (STL) syntax of the IEC 61131-3 standard has been added to the REXLANG function block. (#1126)

15.9 Modbus Communication (MbDrv)

- New configuration dialog in MbDrv has been implemented (#1256)

15.10 RexComp

- RexComp detects a missing underscore in I/O driver flag and issues a warning. (#1286)

15.11 Function Block Editors

- CamEdit, an electronic cam profile editor, is included in the development tools installer. (#245)

REX 2.10.8

16.1 Function Blocks

- Added WSCH function block - weekly scheduler. (#1208)

16.2 General

- Installing REX on Raspberry Pi has never been easier: installation scripts are available. (#1337)

16.3 RexCore

- Raspbian Jessie operating system for Raspberry Pi is supported. (#1336)

16.4 Raspberry Pi (RPiDrv)

- The UniPi EMO-AO4 expansion board is now supported. (#1298)

REX 2.10.7

17.1 RexDraw

- Fixed problem with numbers like 9.999999999 in RexDraw in online mode (#1158)
- RexDraw no longer crashes when monitoring INF signal. (#1027)
- Online monitoring of individual I/O flags is supported. (#667)

17.2 WinPac (WpcDrv)

- The I8054W DI/DO module is now supported. (#1176)

17.3 I/O Drivers

- The S7Drv input/output driver for communication with Siemens PLCs (LOGO, S7) has been added. (#1164)
- The DbDrv input/output driver for data exchange with database systems via ODBC has been added. (#1204)

17.4 Inkscape HMI

- The SliderHorizontal component now follows the cursor correctly. (#1042)
- The Gauge270 component processes Unicode characters correctly. (#1190)

17.5 Documentation and Manuals

- Minor corrections and improvements. (#1184)

REX 2.10.6

18.1 RexCore

- The executive timing error for base tick greater than 4.2s has been fixed. (#1061)

18.2 RexView

- The number of displayed decimal digits in the labels of Y axis in the trend is automatically adjusted according to the zoom level. (#1055)

18.3 Raspberry Pi (RPiDrv)

- The bug preventing the GPIO flags from being used when the PiFace Digital add-on board is in use has been fixed. (#1143)
- The initialization sequence of the PiFace Digital add-on board has been improved to avoid problems when power-cycling the Raspberry Pi. (#1144)
- The version v1.1 of the UniPi add-on board is fully supported. The range to command the analog output is now 0-10 [V], which is backwards incompatible with the original version of the UniPi board, where the range was 0-100 [%]. (#1098)
- The Raspberry Pi 2 minicomputer is fully supported. (#1104)
- Fixed initialization sequence for the EMO-R-8 relay extension board (UniPi). (#1050)

18.4 OPC DA Server

- Bugs in error reporting functions have been fixed. (#1080)

18.5 RexComp

- The bug in compiling huge subsystems (>32767 blocks) has been fixed. (#1096)

18.6 Documentation and Manuals

- Added information about handling the unconnected inputs of the ANDOCT block. (#1085)
- Added documentation for the Raspberry Pi 2 minicomputer and the UniPi v1.1 add-on board. (#1129)

18.7 Function Blocks

- The threshold for terminating the identification pulse of the PID autotuning block PIDMA must be given as a positive value. (#1057)
- It is possible to leave the fname parameter in the SILO and SGSLP function blocks blank. In such a case the full path to the function block is used as the file name. (#1097)

REX 2.10.5

19.1 RexCore

- A critical bug causing the runtime core to crash during online monitoring in RexDraw has been fixed. (#1020)

19.2 RexView

- Fixed random activation of the security mechanisms in the Target device connection dialog. (#1013)
- A data description file is generated when exporting data from archive. (#1003)
- Added context menu for the events and alarms graph (archive subsystem). (#1030)

19.3 Function Blocks

- The TRNDV function block, a vector version of the TRND block, is ready for use. (#1019)

19.4 Raspberry Pi (RPiDrv)

- The Raspberry Pi driver now supports the UniPi add-on board. (#1041)

REX 2.10.4

20.1 RexCore

- Fixed the problem of starting RexCore on Raspberry Pi when specific USB flash drives are present. (#999)
- Bugfixes in downloading HMI to Linux/Xenomai-based target devices. (#836)
- Bugfixes in uploading executive configuration from Linux/Xenomai-based target devices. (#867)
- Fixed timing of the task in the QTask level when the factor parameter was greater than 1. (#954)

20.2 Raspberry Pi (RPiDrv)

- The Raspberry Pi driver now supports the Intellisys PIO add-on board. (#906)
- Fixed PWM functionality upon restarting Raspberry Pi. (#915)
- Raspberry Pi model B+ is fully supported including the ACT LED (GPIO47). (#905)

20.3 RexView

- Tree view and windows layout is restored upon downloading a new executive to the target device. (#931)
- Export of large trends and archives has been fixed. (#964)
- Fixed bugs in displaying archive data, namely events in graphs. (#988)
- Added the possibility to view all input signals with the local override flag. (#787)
- Program layout and list of target devices can be saved to a file. (#885)

- Further improvements in trends usability and user comfort. (#886)
- The x-axis of trends now displays absolute time and date by default. (#934)
- Read-only text boxes can be clearly identified by the background color. (#893)
- Reconnecting to one target device no more influences the connections to other devices. (#895)
- Date is now correctly displayed in trends. (#907)
- Bugfixes in displaying the Local override flag. (#912)
- Dragging a function block to the Inspect view panel does not cause its malfunction anymore. (#917)
- Items in the InspectView panel are correctly refreshed after reconnecting to the target device. (#918)
- It is now possible to force restart of the executive on the target device. (#940)
- More user-friendly trends (splitting axes, signal ordering, etc.). (#983)

20.4 RexDraw

- Exporting HTML version of control schemes for the WebWatch HMI is now fully functional. (#925)
- Added shortcuts for compiling and downloading the project. Shortcut for monitoring a block has been changed to Ctrl+W. (#942)

20.5 WebBuDi HMI

- Bugfix in hide_by and disable_by options: reversed meaning. (#801)
- Cursor behavior over read-only elements has been fixed. (#805)
- The ESC key forces re-reading of a numeric value from the target device. (#995)

20.6 Inkscape HMI

- Special language characters can be used in HTML title. (#812)
- The libsDirectory file is no longer placed in C:\Users\username\AppData\Roaming\inksc to avoid conflicts with the standard installation of Inkscape. (#909)

- Scaling of the HMI using a ViewBox has been fixed. (#922)
- Fixed autoscaling of buttons. (#923)

20.7 Documentation and Manuals

- Added information about viewing debugging messages of the REXLANG function block (the Trace command). (#967)

REX 2.10.3

21.1 General

- Archiving data using the ACD block now correctly respects the tmin parameter. (#857)

21.2 RexView

- Improved trends in RexView. (#826)
- The Sequence tab displays relevant information about the subsystem. (#835)
- When viewing trend, an indicator showing the amount of data in the buffer is displayed. (#707)
- It is possible to save the axes settings of individual trends. (#783)
- Improved shortcuts management. (#863)
- Fixed daylight-saving-related errors. (#884)
- Fixed bugs related with simultaneous connection to multiple target devices. (#891)

21.3 RexDraw

- Error messages extended. (#883)

21.4 Function Blocks

- Reading values in various formats for the EPC block fixed. (#890)
- Fixed problems with daylight-saving time in the DATETIME block. (#838)

21.5 Modbus Communication (MbDrv)

- Improved Modbus diagnostics in the System log. (#892)

21.6 Documentation and Manuals

- Minor corrections and improvements. (#901)

21.7 Function Block Editors

- SFCEditor - The timeouts of individual steps are now displayed correctly. (#904)

21.8 Examples

- Updated version of the REXduino connection between the REX Control System and Arduino-compatible microcontrollers. (#850)

21.9 WebBuDi HMI

- Extended functionality of the WebBuDi HMI (colors, links). (#874)

REX 2.10.2

22.1 RexCore

- Fixed problems with dynamic libraries on Raspberry Pi. (#831)

22.2 RexView

- Minor fixes in user dialogs. (#823)

REX 2.10.1

23.1 RexView

- Data exporting from RexView to CSV file has been fixed. (#810)
- Displaying of trend and archive data has been significantly improved. (#779)
- Significant acceleration of archive data reading. (#674)
- Minor fixes. (#788)

23.2 RexDraw

- HTML generator has been improved. (#721)
- Reconnecting Arduino to USB port during online monitoring no longer crashes RexDraw. (#795)
- The bug appearing in nested subsystems with very long names has been fixed. (#811)

23.3 WebBuDi HMI

- Improvements in configuration of HMI in HTML. (#741)

23.4 Function Blocks

- Path handling has been unified (function blocks SILO, SGSLP, EPC, REXLANG). (#803)
- Resetting of CSSM, CDELSSM, DSSM, DDELSSM function blocks has been fixed. (#780)
- The REXLANG programmable block now supports communication over the I2C bus. (#794)

23.5 Modbus Communication (MbDrv)

- Signed numeric types are supported in the Modbus configuration dialog. (#817)

23.6 Documentation and Manuals

- Function blocks manual contains a list of function blocks and licensing groups. (#799)

REX 2.10

24.1 Function Blocks

- Several function blocks were renamed, others were moved from one library to another. Use the RexConv utility (part of the development tools installation package) to convert the control schemes from previous versions. (#621)
- Function blocks for array parameters handling were added (SETPA, GETPA, PARA). (#709)
- Function block TIMER_ - fixed the behavior of the Q output when the pt parameter is changed. (#750)
- The DATETIME block now shows local time correctly when daylight-saving-time is used. (#744)
- A new SILO function block for read/write operations has been added (category Basic). (#760)
- The FOPDT function block was added upon user requests to simplify the simulation of first order plus dead-time systems. (#761)

24.2 Function Block Editors

- SFC Editor - Problems with building of some SFC diagrams were fixed. (#705)

24.3 RexCore

- Download and upload operations between the host computer and the target device were improved. (#677)
- Bugfixes in the runtime core. (#720)
- The Raspberry Pi driver supports the PiFace Digital expansion board. (#756)
- The licensing mechanism was completely rewritten. (#655)

- The 2-hour evaluation version of the runtime core requires a connection from RexView or RexDraw to start the control algorithm. (#758)
- The executive file exec.rex is stored in All users profile on Windows target to avoid write-permission-related problems. (#772)

24.4 RexView

- New version of RexView. The version formerly referred to as RexViewQt has become the main and official diagnostic tool. (#768)

24.5 RexDraw

- Minor compatibility issues between RexDraw and Simulink were fixed. (#357)
- Unexpected disruptions in communication during online monitoring are now handled correctly. (#486)
- Fixed some problems with popup elements of subsystem mask during online monitoring. (#681)

24.6 I/O Drivers

- "Start time" and "Stop time" were added to driver diagnostics. (#614)

24.7 Modbus Communication (MbDrv)

- Error detection is improved for Modbus slave, log messages were added. (#743)

24.8 Documentation and Manuals

- Improved documentation of archiving subsystem function blocks. (#567)
- Improved documentation and examples. (#716)

24.9 Installer - Windows

- User manuals for Modbus, Raspberry Pi and 1-Wire were added. (#582)

24.10 RexComp

- The type of subsystem parameter (double/long/bool/...) is now derived from the corresponding parameter type (not from the initial value). (#647)

24.11 General

- The communication with HMI components was improved. (#660)

24.12 RexWS

- The default port of the websocket server was changed to 8008 to avoid conflicts on the well-known port 80. (#736)

24.13 RexViewQt

- Archive data browsing and exporting is now available. (#718)

24.14 1-Wire Communication (OwsDrv)

- Improved diagnostic and error messages of the 1-Wire driver. (#747)
- The 1-Wire driver has a new configuration dialog. (#762)

REX 2.09

25.1 RexCore

- The Raspberry Pi miniocomputer is now supported as a target device of the REX Control System. (#710)

25.2 RexDraw

- Fixed minor problems in coloring subsystems. (#670)
- Tracking of parameter changes in the online mode of the RexDraw development tool. (#711)
- RexDraw now includes a generator of control schemes in HTML for easy monitoring of the control algorithm in regular web browser. (#712)
- Fixed minor problems that appeared on some systems when focusing the Block library window. (#626)

25.3 Function Blocks

- Inaccuracies in terminating conditions of the BIS and BINS generators were corrected. (#666)
- Fixed the SETPI block to set the popup-type parametrs in Simulink correctly. (#678)
- The 'Delayed change' mode was added to the TIMER_ block. (#682)

25.4 General

- The SETPx and GETPx blocks can now access individual items of array parameters. (#668)
- It is now possible to connect the REX Control System with Arduino microcontrollers. Search for REXduino in the examples included in the installation package. (#713)

25.5 RexViewQt

- Experimental version of the RexView diagnostic program developed in the Qt framework is included in the instalation package. (#714)

REX 2.08

26.1 RexCore

- Opening and setting parameters of a serial line from the REXLANG programmable block has been improved. (#596)

26.2 RexView

- The connections between subsystem parameters and the blocks which use them were fixed. (#604)

26.3 RexDraw

- File saving error dialog was implemented in RexDraw for the case of no write permission. (#656)
- The constants in CNI, CNB and CNR blocks no longer overflow the block symbol. (#587)
- Fixed: Undesired changes in SISO block orientation when dragging the block along an existing horizontal connection. (#617)

26.4 Function Blocks

- The EPC block has been added to support calling of external programs. (#611)
- The 8-input blocks ANDOCT, OROCT and ADDOCT has been added to complement the existing AND_, OR_ and ADD function blocks. (#442)
- The TIMER_ block is available. (#603)
- The EDGE block is renamed to EDGE_ for compatibility reasons. (#619)

26.5 Ethernet POWERLINK (EplDrv)

- Fixed the 'Replace node' functionality. (#457)

26.6 General

- Minor corrections in the general error strings of the REX control system. (#662)

REX 2.07

27.1 RexCore

- Validation of archive subsystem configuration is more strict to avoid RexCore crashes. (#598)
- The afac and arc parameters of the TRND, ALB, ALBI, ALN and ALNI block no longer cause a crash of RexCore when no archives are configured. (#627)

27.2 General

- Unification of parameter referencing in blocks SGSLP, SETPx and GETPx. (#641)
- Fixed integer values formatting in the text file generated by the SGSLP block. (#612)

27.3 RexDraw

- The online monitoring of subsystems with virtual inputs (global tags, parameters etc.) was fixed. (#560)
- RexDraw no longer crashes when creating subsystems containing user annotations. (#616)
- Fixed problem when selecting the whole drawing using Ctrl+A in the case the drawing is scrolled away from its origin. (#607)
- Implemented new strategy for block naming after copy - increases number at the end of the original name, while the original name is preserved. (#618)
- Fixed probelm with text overflow when printing parameter value inside a block body.
  If the dispalyed text extents the block dimensions, it is replaced by the parameter name.
  (#631)

27.4 RexView

- Archive count indicator in RexView was fixed (#608)

27.5 Function Blocks

- Function blocks for simulation of linear time-invariant systems were added. (#562)
- Function blocks for integer addition and subtraction were added: IADD, ISUB. (#471)
- Analog sequence generator (ANLS) malfunction for short sequences was fixed. (#646)

27.6 Ethernet POWERLINK (EplDrv)

- Real-time communication via Ethernet POWERLINK is now supported in Linux. (#107)

27.7 RexComp

- Fixed the behaviour of the switch command in the REXLANG block in the case of extreme differences among the individual case() constants. (#605)

REX 2.06

28.1 RexCore

- The following archive error fixed. Writing to disk archives stopped after the configuration download. (#506)
- Fixed switching into constant value for task input. (#561)

28.2 Documentation and Manuals

- Incorrect assignment of binary selector signals SWn was fixed in the documentation of SELQUAD, SELOCT and SELHEXD blocks. (#555)

28.3 General

- The error occuring when a configuration with the CAN driver included was downloaded from RexDraw has been fixed. (#487)
- Big jitter of time-slice in linux was fixed. (#509)
- Fixed mismatch interconnection of the From and Goto blocks (mainly in scoped mode). (#527)
- Fixed problem in setting enum-type parameters in case first option is not value 1. (#551)

28.4 RexView

- The user is informed by the message box when RexView connects to RexCore with differen version (only major and minor version numbers are tested). It is strongly recommended to disconnect from the running RexCore and use the RexView with the appropriate version. (#476)
- RexView archive data mixing error repaired. This error occured only in REX version 2.05 during reading data from more than two archives. (#505)

28.5 RexDraw

- Fixed problem with rounding online values in the RexDraw. (#569)

28.6 Function Blocks

- Fixed problem in block MC_MoveVelocity (the block not react on error-stop). (#526)

28.7 Installer - Windows

- 64bit OPC DA proxy/stub DLLs have been added to the 32bit REX installation for Windows. Moreover, first versions of CAN, EtherCAT, Hilscher and simulation I/O driver documentation and documentation of REX authorization tool (only in Czech) have been added. (#585)

28.8 RexComp

- Improved checking parameters start and stop in block TASK to eliminate unpredictable behaviour. (#557)

REX 2.05

29.1 RexCore

- Execution stop due to the quick task time collision removed. This problem occured when the quick task should be started again but it is still running. Now, the time collision are counted and displayed in RexView.
  Too frequent occurrence of these collisions indicates an unreliable running of the executive. (#441)
- Command switch() in source code of the REXLANG block was fixed. This construction return error in some cases. (#437)

29.2 RexLib for Matlab

- A 64 bit RexLib installation problem fixed. RexLib did not function in computers without Visual Studio 2005 SP 1 with the latest security update. (#432)

29.3 Documentation and Manuals

- Description of the REX control system function blocks is available in HTML format. (#348)

29.4 General

- A driver name in REX-namespace was changed from class-name into instance-name. (#414)
- It is possible to have more than one version of the REX Control System installed on a single computer. (#172)

29.5 RexDraw

- Implemented new, Matlab compatible algorithm for block alignment and pin position computing
  (#202)
- The RexDraw tool allow download configuration into target device. (#329)
- Implemented as requested: newly added parameter is added below the selected one.
  Fixed bug with reindexing parameters after parameter removal.
  Added possibility to reorder the parameters manually using up and down arrow buttons.
  (#446)
- Added possibility to change parameters (font and color) for multiple selection.
  (#366)
- Double click on the block body opens the edit dialog and focuses the first parameter. Double click on the block name opens the edit dialog and focuses the block name.
  (#372)
- CNx blocks in online mode are drawn with Y symbol inside the body instead of the designed constant. The actual parameter or output value can be determined using the online monitoring methods - tooltip or block watch.
  (#421)
- Disappering of subsystem's parameters was fixed. (#434)
- New block library window was implemented. The blocks are now listed in a list control. One column contains the name of the block, second the library where the block resides. The blocks in the list may be sorted according to their names or by the library. It is possible to apply a filter as well and display only blocks containing given sequence of letters or blocks within a library whose name contains another sequence. The panel to the right from the block list contains preview of actually selected block. The library window supports block dragging to the drawing - both from the list and from the preview panel.
  (#412)
- Now it is possible to invoke user's guide with block description also from the "block parameters" dialog. To invoke the help, press the F1 key or the "Help" button.
  (#465)

29.6 RexComp

- Fixed some unexpected behavior of the REXLANG block parameters (not work with default values, not possible use subsystem's parameters). (#444)

29.7 RexView

- Keyboard shortcut Ctrl+E did not work from the Trend pane. Repaired. (#427)

REX 2.04

30.1 RexDraw

- Fixed.
  Online monitoring of blocks whose type is unknown for the REX system (for example Display) is supressed.
  (#383)

30.2 General

- Fixed different format in RexView and RexDraw for parametr TRND:arc and similar (#408)

REX 2.03

31.1 General

- Diagnostic messages of RexCore has been enhanced (#189)

REX 2.02

32.1 RexDraw

- Fixed incorrectly formated *.mdl file by RexDraw in case 4th level of subsystem. (#354)

32.2 RexView

- Errors of the REX version 2.01 installation. Czech versions of RexView and RexRun cannot be selected. Moreover, czech manual of the NidDrv is missing. Fixed. (#345)

32.3 Documentation and Manuals

- A new leaflet of the REX Control system has been created. The datasheet is available in the PDF format at www.rexcontrols.com. (#284)

REX 2.01

33.1 RexDraw

- national specific characters problem in RexDraw fixed (#290)

33.2 RexCore

- Resetting of a TRND block using the R1 input while the block data was read simultaneously caused the RexCore crash. Fixed. (#343)

33.3 RexComp

- The RexConv program (originally called RexConv130 in older REX installations) has been updated. The program performs the automatic conversion of the .mdl configuration files from older versions to the current version. See the User manual (a part of the REX installation) for more details. (#193)

33.4 Examples

- Installation examples have been converted to the last version of the REX system. (#289)

33.5 RexView

- Switching of remote licensing dialog texts repaired after a change of licensing operation. (#315)

33.6 RexConv

- Fixed the converted file encoding error, where texts containing ASCII characters with greater code than 127 was damaged (e.g. some Czech characters). (#288)

REX 2.0

34.1 RexView

- Fixed crash when a subsystem is selected which connects its input directy to its output. (#230)

34.2 RexCore

- Fixed the RexCore registration error in Windows and Windows CE. Some registry keys were not created during the first registration process and thus a repeated registration was necessary. (#20)

34.3 Documentation and Manuals

- PSMPC - Simulink warning added (#177)

34.4 Function Blocks

- A new blockset PARAM has been created. The blocks SETPR,-I,-B, GETPR,-I,-B, PARR,-I,-B from the MATH blockset and the SGSLP block from the SPEC blockset were moved to the PARAM blockset. (#98)
- Correction of an error in the SAT block, which did not respond to changes in parameters and hilim0 lolim0 even if HLD = on. In the case HLD = on, now the block tracks the changes in parameters hilim0 and lolim0 with same ramps as the hi and lo inputs in the case HLD = off. (#236)

34.5 RexDraw

- It is possible to open the function blocks manual from the Help menu or by pressing the F1 key in the RexDraw and RexView programs. (#15)

REX 2.0 beta 2

35.1 Function Blocks

- The diagnostics of the SGSLP block parameters has been improved. MATLAB or REX system crash might have occured in previous releases, now the block reports an error. (#126)
- Modification of steady state initialization of the derivative filter and implementation of one step manual tracking for the PIDMA, PIDUI and PIDGS controllers (#129)

REX 2.0 beta1

36.1 RexCore

- It is now possible to set the TCP port which RexCore uses for communication (by command line option or via Windows registry). (#19)

36.2 Function Blocks

- Rounding problem of the btime and dtime parameters fixed in the POUT block. (#213)

36.3 General

- Various input and output signals have been renamed (unification of naming and meaning).
  (#128)

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